
Hypertension and Cholesterol

HYPERTENSION

Definition: Respondents who report they have been told by a health professional their blood pressure is high.

Prevalence of Hypertension

- South Dakota 24.8%
- All participants nationwide 25.8%

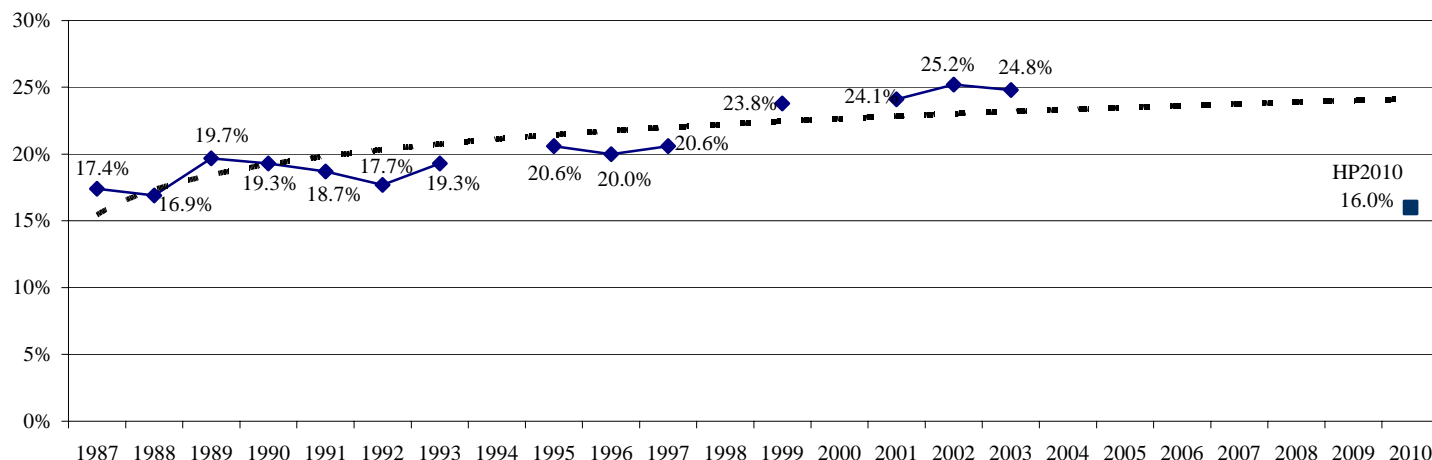
Healthy People 2010 Objective

Reduce the proportion of adults with hypertension to 16 percent.

Trend Analysis

Overall, the percent of respondents who have hypertension has been increasing since the question was first asked in 1987. South Dakota has not met the *Healthy People 2010 Objective* of 16 percent.

Figure 29
Percent of Respondents Who Were Told They Have Hypertension,
1987-1993, 1995-1997, 1999, and 2001-2003



Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 1987-1993, 1995-1997, 1999, and 2001-2003

Demographics

Gender

There is no appreciable difference in hypertension between males and females overall. However, there are a few selected demographics that do demonstrate some gender differences. Males show a much higher prevalence of hypertension in the 25-34 year old age group, household income group of \$75,000 and over, college graduates, and those who are married.

Age	Hypertension increases as age increases with the most pronounced increases beginning with the 35-44 age group and occurring all the way through the 65-74 age group. However, unlike females who show their first large increase with the 35-44 age group, males do not show a large increase until they reach the 45-54 age group.
Race	There are no substantial racial differences in hypertension.
Region	There are no considerable differences among the five geographic regions.
Household Income	Hypertension generally decreases as household income increases. This is due mostly to the patterns of females because males do not demonstrate the same trend in hypertension as household income increases.
Education	Hypertension decreases as education levels increase with females showing large drops in hypertension as various education levels are attained. However, males do not show as distinct an association between the two.
Employment Status	Those who are retired and unable to work demonstrate the highest rates of hypertension, but it is interesting to note that those who are self-employed show a significantly higher prevalence of hypertension than those who are employed for wages.
Marital Status	Those who are widowed demonstrate the largest prevalence of hypertension, while those who have never been married show the smallest prevalence.

Table 31
Respondents Who Were Told They Have Hypertension, 2003

	Total			Male			Female		
	# Resp.	%	95% CI	# Resp.	%	95% CI	# Resp.	%	95% CI
Total	5,255	24.8	(23.5-26.1)	2,194	24.7	(22.7-26.7)	3,061	24.9	(23.2-26.6)
Age									
18-24	359	4.1	(2.3-7.3)	170	3.9	(1.7-8.7)	189	4.3	(1.9-9.6)
25-34	659	8.2	(6.1-11.1)	272	11.6	(7.9-16.7)	387	4.8	(3.1-7.4)
35-44	982	13.8	(11.6-16.4)	435	15.8	(12.4-19.9)	547	11.9	(9.2-15.2)
45-54	1,025	25.6	(22.7-28.7)	467	28.7	(24.3-33.5)	558	22.3	(18.9-26.3)
55-64	798	40.4	(36.7-44.2)	334	42.8	(37.2-48.7)	464	38.0	(33.2-42.9)
65-74	689	49.6	(45.4-53.8)	272	44.5	(38.1-51.0)	417	54.1	(48.8-59.3)
75+	709	56.7	(52.7-60.7)	234	54.7	(47.7-61.6)	475	57.9	(53.0-62.7)
Race									
White	4,795	24.9	(23.6-26.3)	2,017	24.9	(22.9-27.0)	2,778	25.0	(23.3-26.8)
American Indian	281	25.1	(19.7-31.4)	103	25.6	(17.1-36.4)	178	24.8	(18.3-32.6)
Region									
Southeast	1,288	22.9	(20.6-25.5)	544	22.3	(18.9-26.2)	744	23.6	(20.5-27.0)
Northeast	1,457	25.9	(23.6-28.4)	594	26.4	(22.7-30.3)	863	25.6	(22.7-28.7)
Central	672	24.5	(21.2-28.0)	278	23.9	(19.1-29.5)	394	25.0	(20.8-29.6)
West	1,444	26.0	(23.6-28.6)	621	26.4	(22.8-30.4)	823	25.7	(22.6-28.9)
American Indian Counties	394	27.3	(22.6-32.5)	157	28.0	(20.9-36.5)	237	26.6	(20.8-33.5)
Household Income									
Less than \$15,000	582	30.7	(26.6-35.2)	193	24.7	(18.7-31.8)	389	35.0	(29.7-40.7)
\$15,000-\$19,999	457	31.1	(26.5-36.1)	155	27.6	(20.4-36.2)	302	33.5	(27.7-39.7)
\$20,000-\$24,999	597	29.1	(25.1-33.5)	257	26.6	(21.0-33.1)	340	31.9	(26.5-37.7)
\$25,000-\$34,999	840	25.6	(22.4-29.1)	354	30.1	(24.7-36.0)	486	21.5	(18.0-25.6)
\$35,000-\$49,999	927	22.6	(19.8-25.5)	420	21.8	(17.9-26.2)	507	23.4	(19.7-27.5)
\$50,000-\$74,999	752	19.5	(16.6-22.8)	355	22.8	(18.5-27.9)	397	15.7	(12.3-19.7)
\$75,000+	568	19.8	(16.5-23.6)	316	25.3	(20.5-30.8)	252	11.1	(7.8-15.7)

Table 31 (continued)
Respondents Who Were Told They Have Hypertension, 2003

	Total			Male			Female		
	# Resp.	%	95% CI	# Resp.	%	95% CI	# Resp.	%	95% CI
Education									
Less than High School	554	35.0	(30.5-39.8)	257	30.8	(24.8-37.6)	297	39.8	(33.3-46.7)
High School or G.E.D.	1,762	26.3	(24.1-28.6)	765	24.1	(21.0-27.6)	997	28.5	(25.5-31.7)
Some Post-High School	1,525	22.6	(20.3-25.0)	570	23.0	(19.4-27.1)	955	22.2	(19.5-25.1)
College Graduate	1,396	21.3	(19.1-23.8)	595	24.6	(21.1-28.6)	801	18.1	(15.5-21.0)
Employment Status									
Employed for Wages	2,757	17.0	(15.5-18.6)	1,150	18.0	(15.7-20.6)	1,607	16.0	(14.2-17.9)
Self-employed	659	22.2	(18.9-25.9)	445	23.5	(19.5-28.1)	214	18.6	(13.7-24.8)
Unemployed	112	18.3	(10.6-29.6)	*	*	*	*	*	*
Homemaker	252	22.8	(17.7-28.9)	*	*	*	*	*	*
Retired	1,249	54.6	(51.6-57.7)	453	52.9	(47.9-57.9)	796	56.0	(52.1-59.7)
Unable to Work	123	42.1	(32.2-52.7)	*	*	*	*	*	*
Marital Status									
Married/Unmarried Couple	3,121	24.6	(23.0-26.3)	1,394	27.1	(24.7-29.6)	1,727	22.1	(20.1-24.2)
Divorced/Separated	693	26.5	(23.1-30.2)	274	30.5	(25.0-36.6)	419	23.6	(19.5-28.4)
Widowed	720	53.1	(49.1-57.1)	120	49.8	(39.8-59.8)	600	53.8	(49.4-58.1)
Never Married	716	11.8	(9.3-14.8)	405	12.3	(9.1-16.4)	311	11.0	(7.4-15.9)

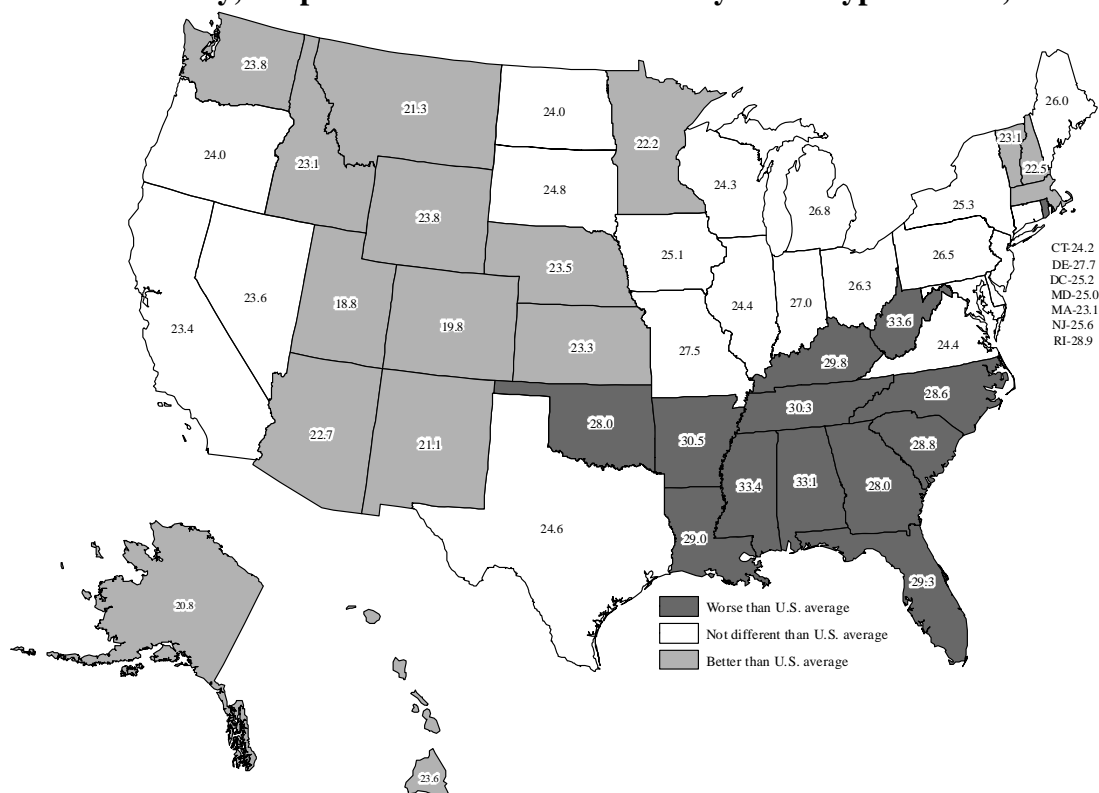
Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 2003

Note: *Results based on sample sizes less than 100 have been suppressed.

National Statistics

The national percent for respondents who were told they have hypertension is 25.8 percent. South Dakota was not significantly different from the United States. Utah had the lowest percent of respondents who have hypertension with 18.8 percent, while West Virginia had the highest percent of 33.6 percent.

Figure 30
Nationally, Respondents Who Were Told They Have Hypertension, 2003



Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 2003

Further Analysis

Following are data illustrating the percent of those who have hypertension for various health behaviors and conditions. For example, 18.6 percent of respondents who stated they are not doing anything to control weight have hypertension, while 27.2 percent of respondents who stated they are trying to lose or maintain weight have hypertension.

Table 32 Hypertension for Selected Health Behaviors and Conditions, 2003			
Health Behavior or Condition	# Respondents	% Hypertension	95% CI
Fair or Poor Health Status	797	48.5	44.5-52.6
Excellent, Very Good, or Good Health Status	4,448	21.2	19.9-22.5
Obese	1,220	38.9	35.9-42.1
Overweight	3,129	31.7	29.9-33.6
Not Overweight	1,915	13.7	12.2-15.4
No Leisure Time Physical Activity	1,276	32.2	29.3-35.2
Leisure Time Physical Activity	3,977	22.7	21.3-24.2
No Moderate Physical Activity	2,840	27.9	26.1-29.8
Moderate Physical Activity	2,253	21.0	19.2-22.9
No Vigorous Physical Activity	4,195	27.7	26.2-29.2
Vigorous Physical Activity	978	14.4	12.2-16.9
Not Doing Anything to Control Weight	1,425	18.6	16.6-20.8
Trying to Lose or Maintain Weight	3,821	27.2	25.7-28.8
Less Than Five Servings of Fruits and Vegetables	4,190	23.2	21.8-24.6
At Least Five Servings of Fruits and Vegetables	1,065	31.6	28.6-34.8
Current Smoker	1,139	18.3	15.9-21.0
Former Smoker	1,449	34.0	31.3-36.7
Never Smoked	2,661	23.1	21.4-24.9
Smokeless Tobacco Use	290	17.4	13.3-22.3
No Smokeless Tobacco Use	4,879	25.3	23.9-26.6
Drank Alcohol in Past 30 Days	3,015	21.3	19.7-22.9
No Alcohol in Past 30 Days	2,227	30.3	28.1-32.5
Binge Drinker	794	16.0	13.4-19.1
Not a Binge Drinker	4,433	26.9	25.4-28.3
Heavy Drinker	196	19.5	14.3-26.1
Not a Heavy Drinker	5,029	25.0	23.7-26.4
High Blood Cholesterol	1,393	45.9	43.0-48.9
No High Blood Cholesterol	2,707	24.0	22.2-25.8
No Mammogram within Past Two Years (40+)	495	30.9	26.5-35.7
Mammogram within Past Two Years (40+)	1,692	37.2	34.7-39.8
Insufficient Cervical Cancer Screening	319	22.0	17.4-27.4
Sufficient Cervical Cancer Screening	1,911	19.6	17.8-21.5
No Health Insurance (18-64)	366	13.5	10.2-17.6
Health Insurance (18-64)	3,377	18.2	16.8-19.7
Employer Based Health Insurance Coverage (18-64)	2,367	16.6	15.1-18.3
Private Plan (18-64)	511	17.5	14.1-21.5
Medicaid or Medical Assistance (18-64)	118	23.3	14.6-35.0
The Military, CHAMPUS, TriCare, or the VA (18-64)	131	34.8	26.4-44.2
The Indian Health Service (18-64)	145	20.8	14.3-29.3
No Flu Shot (65+)	325	35.9	30.4-41.8
Flu Shot (65+)	1,072	58.4	55.1-61.6

Table 32 (continued) Hypertension for Selected Health Behaviors and Conditions, 2003			
Health Behavior or Condition	# Respondents	% Hypertension	95% CI
No Pneumonia Shot (65+)	500	45.9	41.1-50.8
Pneumonia Shot (65+)	873	57.5	53.8-61.2
Diabetes	452	63.6	58.4-68.6
No Diabetes	4,802	21.8	20.5-23.1
Current Asthma	369	28.6	23.6-34.2
Former Asthma	143	19.9	13.9-27.7
Never Had Asthma	4,728	24.6	23.3-26.0
Arthritis	1,778	43.0	40.4-45.7
No Arthritis	3,440	17.3	16.0-18.7
Arthritis - Activities Limited	836	45.9	42.1-49.9
No Arthritis - Activities Limited	4,373	21.4	20.1-22.7
Disability - Activities Limited	1,125	41.8	38.4-45.3
No Disability - Activities Limited	4,094	20.7	19.4-22.1
Disability with Special Equipment Needed	371	49.3	43.2-55.4
No Disability with Special Equipment Needed	4,852	23.2	22.0-24.6
Injured in a Fall (45+)	177	45.0	37.2-53.1
Not Injured in a Fall (45+)	3,056	39.7	37.8-41.7
Sunburn in Past 12 Months	2,001	15.8	14.2-17.7
No Sunburn in Past 12 Months	3,234	31.9	30.1-33.8
Military Veteran	860	36.3	32.8-40.0
Not a Military Veteran	4,350	22.5	21.1-23.9

Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 2003

HIGH BLOOD CHOLESTEROL

Definition: Respondents who report they have had their blood cholesterol checked and were told it was high by a health professional.

Prevalence of High Blood Cholesterol

- South Dakota 31.2%
- All participants nationwide 33.6%

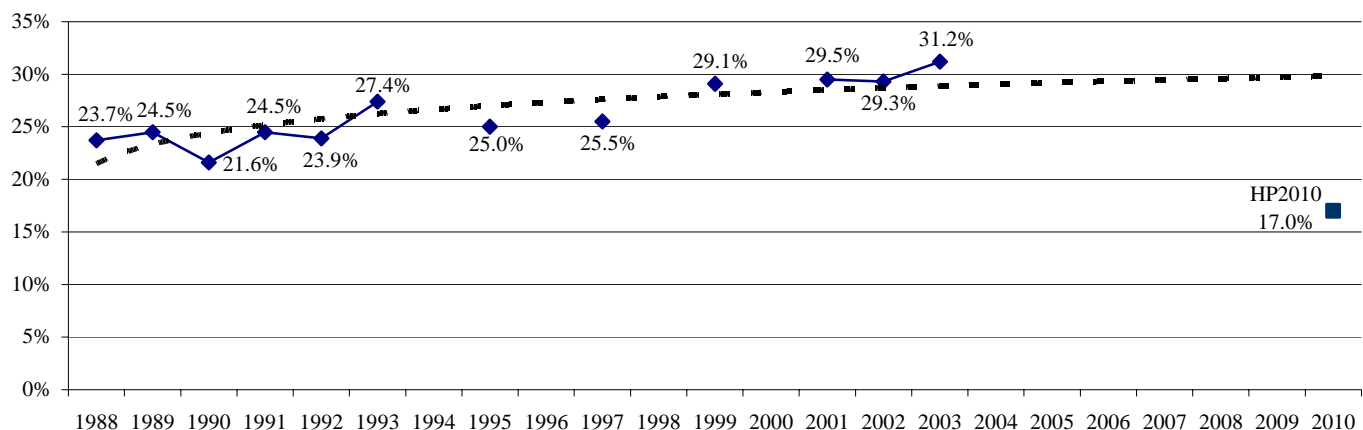
Healthy People 2010 Objective

Reduce the proportion of adults with high total blood cholesterol levels to 17 percent.

Trend Analysis

Overall, the percent of respondents who have high blood cholesterol has been increasing since the question was first asked in 1987. South Dakota has not met the *Healthy People 2010 Objective* of 17 percent.

Figure 31
Percent of Respondents Who Were Told They Have High Blood Cholesterol,
1988-1993, 1995, 1997, 1999, and 2001-2003



Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 1988-1993, 1995, 1997, 1999, and 2001-2003

Demographics

- Gender** There is no appreciable difference in the prevalence of high blood cholesterol between males and females overall.
- Age** High blood cholesterol generally increases as age increases with the most pronounced increases beginning with the 35-44 age group and occurring through the 55-64 age group. However, unlike females who show their first large increase with the 35-44 age group, males do not show a large increase until they reach the 45-54 age group.
- Race** Whites demonstrate a substantially higher prevalence of high blood cholesterol than American Indians.
- Region** There are no considerable differences among the five geographic regions.

Household Income	There does not seem to be any strong association between household income and high blood cholesterol.
Education	High blood cholesterol generally decreases as education levels increase. This association seems to hold true for females more so than males.
Employment Status	Those who are self-employed or retired demonstrate a much higher rate of high blood cholesterol than those who are employed for wages.
Marital Status	Those who have never been married show the smallest prevalence of high blood cholesterol.

Table 33
Respondents Who Were Told They Have High Blood Cholesterol, 2003

	Total			Male			Female		
	# Resp.	%	95% CI	# Resp.	%	95% CI	# Resp.	%	95% CI
Total	4,105	31.2	(29.6-32.8)	1,650	31.9	(29.4-34.4)	2,455	30.5	(28.5-32.5)
Age									
18-24	101	7.9	(3.8-15.7)	*	*	*	*	*	*
25-34	363	13.1	(9.7-17.4)	150	15.2	(10.0-22.5)	213	10.8	(7.0-16.2)
35-44	710	21.4	(18.2-24.9)	295	22.5	(17.7-28.2)	415	20.4	(16.5-25.0)
45-54	889	31.8	(28.5-35.4)	394	34.9	(29.9-40.3)	495	28.8	(24.5-33.5)
55-64	732	42.8	(38.9-46.8)	302	45.6	(39.6-51.7)	430	40.1	(35.1-45.2)
65-74	640	47.9	(43.6-52.3)	249	46.7	(40.0-53.6)	391	49.0	(43.5-54.4)
75+	643	41.7	(37.5-46.0)	209	37.7	(30.7-45.2)	434	44.1	(39.0-49.3)
Race									
White	3,782	31.6	(30.0-33.3)	1,525	32.4	(29.9-35.1)	2,257	30.8	(28.8-33.0)
American Indian	194	20.3	(14.6-27.5)	*	*	*	*	*	*
Region									
Southeast	1,015	28.6	(25.7-31.6)	414	28.5	(24.2-33.3)	601	28.6	(24.9-32.7)
Northeast	1,126	33.2	(30.3-36.2)	446	33.3	(28.8-38.2)	680	33.0	(29.4-36.9)
Central	527	30.8	(26.7-35.1)	215	32.9	(26.6-39.9)	312	28.9	(24.0-34.4)
West	1,131	33.9	(30.9-37.1)	461	36.0	(31.2-41.0)	670	32.1	(28.5-36.0)
American Indian Counties	306	27.2	(22.1-33.0)	114	27.8	(19.8-37.5)	192	26.8	(20.6-34.0)
Household Income									
Less than \$15,000	428	36.7	(31.6-42.0)	136	34.7	(26.5-43.9)	292	37.8	(31.5-44.5)
\$15,000-\$19,999	336	39.3	(33.4-45.5)	*	*	*	*	*	*
\$20,000-\$24,999	452	32.6	(28.0-37.6)	184	32.4	(25.4-40.4)	268	32.8	(27.0-39.2)
\$25,000-\$34,999	642	28.2	(24.5-32.3)	275	30.6	(25.0-36.9)	367	25.9	(21.3-31.2)
\$35,000-\$49,999	722	31.0	(27.5-34.8)	310	30.8	(25.5-36.7)	412	31.2	(26.6-36.2)
\$50,000-\$74,999	617	28.7	(25.0-32.8)	275	32.4	(26.6-38.7)	342	25.0	(20.4-30.2)
\$75,000+	499	29.6	(25.4-34.2)	276	33.1	(27.3-39.5)	223	24.2	(18.8-30.7)
Education									
Less than High School	426	39.4	(34.3-44.8)	190	38.0	(30.6-46.0)	236	40.9	(33.9-48.2)
High School or G.E.D.	1,319	34.2	(31.4-37.1)	548	32.3	(28.1-36.7)	771	36.0	(32.3-39.9)
Some Post-High School	1,159	26.3	(23.6-29.2)	410	26.2	(21.8-31.1)	749	26.4	(23.0-30.0)
College Graduate	1,191	29.9	(27.0-32.8)	500	34.2	(29.7-39.0)	691	25.7	(22.4-29.4)
Employment Status									
Employed for Wages	2,035	25.1	(23.0-27.2)	811	26.7	(23.5-30.2)	1,224	23.5	(21.1-26.2)
Self-employed	506	33.0	(28.5-37.7)	333	34.8	(29.3-40.7)	173	28.7	(22.0-36.4)
Unemployed	*	*	*	*	*	*	*	*	*
Homemaker	195	26.7	(20.3-34.2)	*	*	*	*	*	*
Retired	1,155	45.2	(42.1-48.4)	416	42.4	(37.3-47.6)	739	47.3	(43.4-51.3)
Unable to Work	*	*	*	*	*	*	*	*	*
Marital Status									
Married/Unmarried Couple	2,539	31.4	(29.5-33.4)	1,135	33.2	(30.4-36.2)	1,404	29.6	(27.1-32.2)
Divorced/Separated	537	32.7	(28.4-37.2)	211	33.1	(26.4-40.5)	326	32.4	(27.1-38.1)
Widowed	646	40.0	(36.0-44.2)	105	36.5	(27.1-47.0)	541	40.7	(36.3-45.2)
Never Married	378	18.9	(14.9-23.7)	198	20.9	(15.1-28.1)	180	16.2	(11.5-22.4)

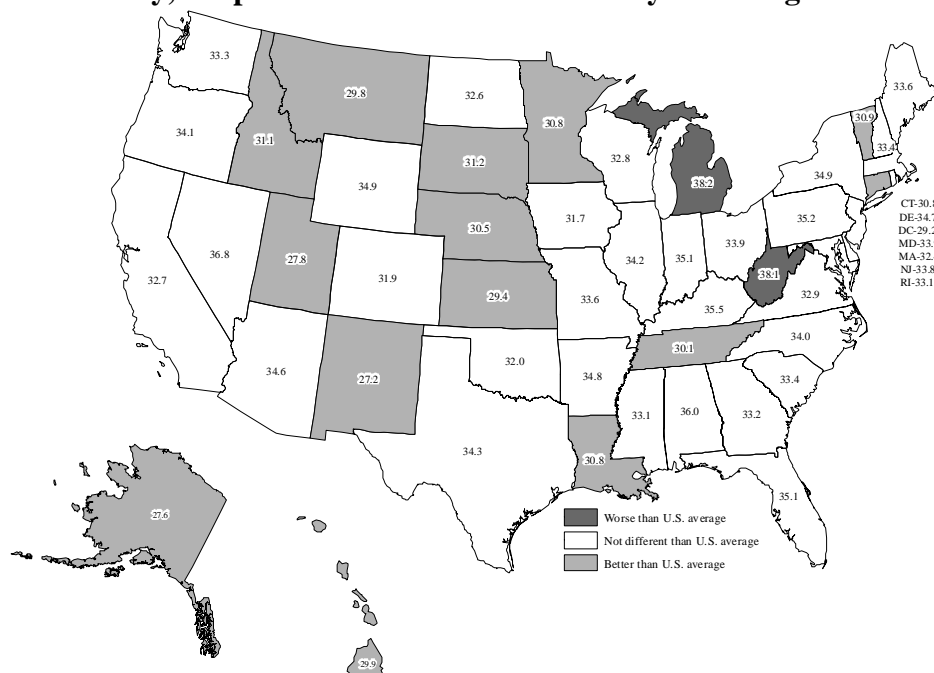
Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 2003

Note: *Results based on sample sizes less than 100 have been suppressed.

National Statistics

The national percent for respondents who have high blood cholesterol is 33.6 percent. South Dakota was significantly better than the United States. New Mexico had the lowest percent of respondents who have high blood cholesterol with 27.2 percent, while Michigan had the highest percent of respondents who have high blood cholesterol with 38.2 percent.

Figure 32
Nationally, Respondents Who Were Told They Have High Blood Cholesterol, 2003



Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 2003

Further Analysis

Following are data illustrating the percent of those who have high blood cholesterol for various health behaviors and conditions. For example, 46.4 percent of respondents who have hypertension have high blood cholesterol, while 24.3 percent of respondents who do not have hypertension have high blood cholesterol.

Table 34			
High Blood Cholesterol for Selected Health Behaviors and Conditions, 2003			
Health Behavior or Condition	# Respondents	% High Blood Cholesterol	95% CI
Fair or Poor Health Status	675	47.4	43.1-51.7
Excellent, Very Good, or Good Health Status	3,422	28.3	26.6-30.0
Obese	1,007	35.1	31.9-38.5
Overweight	2,550	36.2	34.1-38.3
Not Overweight	1,382	22.0	19.7-24.5
No Leisure Time Physical Activity	973	35.4	32.1-38.8
Leisure Time Physical Activity	3,132	30.0	28.2-31.8
No Moderate Physical Activity	2,247	33.4	31.3-35.6
Moderate Physical Activity	1,738	28.3	26.0-30.7
No Vigorous Physical Activity	3,336	32.1	30.4-33.9
Vigorous Physical Activity	709	27.3	23.7-31.1

Table 34 (continued)
High Blood Cholesterol for Selected Health Behaviors and Conditions, 2003

Health Behavior or Condition	# Respondents	% High Blood Cholesterol	95% CI
Not Doing Anything to Control Weight	993	23.9	21.0-26.9
Trying to Lose or Maintain Weight	3,106	33.7	31.8-35.6
Less Than Five Servings of Fruits and Vegetables	3,179	30.3	28.6-32.1
At Least Five Servings of Fruits and Vegetables	926	34.1	30.7-37.6
Current Smoker	759	28.7	25.2-32.6
Former Smoker	1,221	37.7	34.7-40.8
Never Smoked	2,121	28.5	26.5-30.7
Smokeless Tobacco Use	178	26.9	20.2-34.8
No Smokeless Tobacco Use	3,869	31.4	29.8-33.1
Drank Alcohol in Past 30 Days	2,308	30.2	28.2-32.4
No Alcohol in Past 30 Days	1,785	32.5	30.2-35.0
Binge Drinker	506	27.1	22.9-31.7
Not a Binge Drinker	3,574	32.0	30.3-33.7
Heavy Drinker	127	23.0	16.1-31.8
Not a Heavy Drinker	3,951	31.4	29.8-33.1
Hypertension	1,421	46.4	43.5-49.4
No Hypertension	2,679	24.3	22.5-26.2
No Mammogram within Past Two Years (40+)	382	29.0	24.1-34.4
Mammogram within Past Two Years (40+)	1,581	38.4	35.8-41.0
Insufficient Cervical Cancer Screening	212	22.8	17.3-29.5
Sufficient Cervical Cancer Screening	1,517	27.6	25.2-30.2
No Health Insurance (18-64)	197	20.9	15.4-27.8
Health Insurance (18-64)	2,556	27.2	25.3-29.2
Employer Based Health Insurance Coverage (18-64)	1,827	26.1	24.0-28.4
Private Plan (18-64)	367	27.2	22.6-32.5
Medicaid or Medical Assistance (18-64)	*	*	*
The Military, CHAMPUS, TriCare, or the VA (18-64)	115	42.3	32.6-52.7
The Indian Health Service (18-64)	*	*	*
No Flu Shot (65+)	280	39.5	33.4-46.0
Flu Shot (65+)	1,002	45.9	42.5-49.3
No Pneumonia Shot (65+)	436	40.2	35.2-45.4
Pneumonia Shot (65+)	829	46.5	42.8-50.3
Diabetes	429	53.4	48.0-58.7
No Diabetes	3,675	28.9	27.3-30.5
Current Asthma	306	33.1	27.4-39.3
Former Asthma	104	36.7	26.4-48.4
Never Had Asthma	3,685	30.8	29.2-32.5
Arthritis	1,563	42.9	40.2-45.8
No Arthritis	2,517	24.9	23.1-26.8
Arthritis - Activities Limited	729	45.0	40.9-49.2
No Arthritis - Activities Limited	3,348	28.5	26.9-30.2
Disability - Activities Limited	960	43.7	40.1-47.3
No Disability - Activities Limited	3,123	27.7	26.0-29.5
Disability with Special Equipment Needed	320	40.8	34.7-47.2
No Disability with Special Equipment Needed	3,766	30.5	28.9-32.1
Injured in a Fall (45+)	157	41.9	33.8-50.5
Not Injured in a Fall (45+)	2,758	39.4	37.4-41.4
Sunburn in Past 12 Months	1,411	27.1	24.6-29.7
No Sunburn in Past 12 Months	2,681	33.8	31.8-35.8
Military Veteran	741	40.2	36.3-44.1
Not a Military Veteran	3,335	29.1	27.4-30.9

Source: The Behavioral Risk Factor Surveillance System, South Dakota Department of Health, 200

Note: *Results based on sample sizes less than 100 have been suppressed.